



999 WEST VALLEY ROAD
WAYNE, PENNSYLVANIA 19087
215-687-9510

8910-33-01

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(Red)

November 07, 1989
T-585-11-9-14
68-01-7346

Mr. Anthony Dappolone
U.S. Environmental Protection Agency
841 Chestnut Street
Philadelphia, PA 19107

Dear Mr. Dappolone:

Attached please find the sampling plan for Printed Circuits/Lectro Print,
prepared under TDD No. F3-8910-33.

Please endorse below confirming that you have received the attached subject
data and return the form to the above address.

Sincerely,

Garth Glenn/las

Garth Glenn
Regional Operations Manager,
FIT 3

GG/las

Attachments

Signature: 
Anthony Dappolone

Date: 11/7/89



999 WEST VALLEY ROAD
WAYNE, PENNSYLVANIA 19087
215-687-9510

November 6, 1989
C-585-11-9-3
68-01-7346

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Cancelled 12/28/90

Mr. Anthony Dappolone
U.S. Environmental Protection Agency
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107

Subject: Sampling Plan
TDD No. F3-8910-33
EPA No. PA-210/PA-2187
Printed Circuits/Lectro Print
Bristol Township, Bucks County, Pennsylvania

Dear Mr. Dappolone:

Submitted herewith is a sampling plan for the subject site. The site inspection has been tentatively scheduled for the week of November 27, 1989. Permission for site access will be requested from the site owner. Bob Fulton and Carol Kurtz, of the Pennsylvania Department of Environmental Resources (PA DER), will be notified of the site visit.

Summary

Printed Circuits, Incorporated, is located at 1615 Manning Boulevard, Bristol Township, Bucks County, Pennsylvania. The company manufactured printed circuits for the electronic industry. The company was active between 1983 through 1987. The facility has been unoccupied since the company went out of business in 1987.

Before 1983, Lectro Print, a company that manufactured printed circuits, occupied the property. The length of time Lectro Print operated is unknown. In a letter sent to PA DER, dated and received May 23, 1983, Printed Circuits reported the change of name and ownership of the company. It was reported that no changes in processes from Lectro Print to Printed Circuits would take place.

Printed Circuits, Incorporated reported to EPA under RCRA as a treatment, storage, or disposal (TSD) facility. In March 1985, an anonymous caller to PA DER alleged that the company was dumping hazardous wastes into a pit. When the pit was full, employees on several occasions were observed allegedly pumping liquid materials onto a vacant field of an adjacent company. It was also reported that the company was storing drums of waste materials beyond the 90 days permitted during operations under interim status.

Numerous inspections performed by PA DER resulted in several Notices of Violation (NOVs) to be issued to Printed Circuits, Incorporated. Inspections cited poor housekeeping practices, spillage of plating solution throughout the facility, and waste disposal was not conducted in accordance with current regulations. During an inspection in early 1985, EPA observed approximately 150 drums of unknown contents, some marked "Corrosive" and "Flammable," being stored in an unsecured manner on site. Drums were observed to be leaking and bulging. Discoloration of paved and soil surfaces was also observed. Soil samples taken revealed elevated levels of copper sulfate, lead, arsenic, chromium, mercury, and zinc.

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Based on EPA's findings, the regional administrator for Region III EPA determined that there was an imminent and substantial endangerment to the public health, welfare, or the environment due to the release and threatened release from the Printed Circuits, Incorporated site. Therefore, Printed Circuits, Incorporated was ordered to retain a qualified contractor acceptable to EPA to conduct a cleanup of the hazardous substances found at the site. However, Printed Circuits refused to take responsibility for the cleanup because they felt EPA did not have conclusive evidence showing contamination on their property. Printed Circuits did agree to install an eight-foot industrial fence around the drum storage area and to overpack the leaking drums.

EPA utilized CERCLA funds for the removal since Printed Circuits did not accept responsibility for the cleanup. O.H. Materials, of Findlay, Ohio, was contracted by EPA to excavate, transport, and dispose the contaminated soil. The removal project began on May 14, 1985 and ended July 22, 1985. The excavated area was regraded and hydroseeded. Approximately 950 cubic yards of contaminated soil were excavated from the site and disposed at the Evergreen Landfill, located in Northwood, Ohio.

Although remedial measures were taken due to the imminent and substantial threat, it is possible that contaminated soils still remain on site. Remedial measures instituted to date were designed primarily to remove immediate environmental threats and do not represent a complete and comprehensive remedial effort.

In November 1986, NUS FIT 3 was tasked to conduct site discoveries for 21 areas of groundwater contamination in Bucks County, Pennsylvania. At this time, a site discovery form was submitted with Lectro Print as the possible source of contamination of one of the areas. A full history of Lectro Print is not known at this time (see TDD No. F3-8611-38, Bucks County Site Discoveries).

In addition to the aforementioned information on Printed Circuits, Incorporated, it should be noted that there had been a problem in the past (beginning approximately 1979) with groundwater contamination in the area. In 1979, Bucks County Health Department (BCHD) received information that the Bristol Borough-Edgely well field was contaminated. Trichloroethene (TCE) and tetrachloroethene (PCE) were identified as the contaminants. The source of contamination was unknown. BCHD conducted an extensive sampling program to locate the source. Both public and private wells throughout the area were sampled. Results indicated these wells showed elevated levels of TCE and PCE.

In November 1980, BCHD received information from a local resident that drums marked "TCE" were stored outside of Lectro Print, and signs, of some sort of material, dumped at the rear of the facility were evident. BCHD conducted two inspections (December 1, 1980 and December 22, 1980). 1,1,1-trichloroethane drums along with shavings from circuits boards were observed during the inspections. Lectro Print was ordered to remove and properly dispose the material in an approved and timely manner. Private and public groundwater wells in the area were heavily contaminated. A PA DER assessment of Lectro Print indicated that the facility may have caused or at least contributed to the contamination. However, this is an industrial area, and many of the surrounding companies located in industrial parks throughout the area use these or similar chemicals.

On January 14, 1988, NUS FIT 3 conducted a site reconnaissance and observed approximately 14 overpacked drums contained within an 8-foot-high fenced area. In addition, a partially buried 55-gallon drum was observed approximately 70 yards north of the manufacturing building in a wooded area. On March 15, 1988, FIT 3 conducted a magnetometer survey at the site in conjunction with the site reconnaissance. The purpose of the survey was to identify buried drum disposal areas, if any exists. Results of the survey did not identify the presence of buried materials on site.

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Drinking Water Supply

Water is supplied to the site and the immediate vicinity by public water supply systems. The potable supply is distributed by the Lower Bucks County Joint Municipal Authority (LBCJMA) and the Bristol Borough Water Department (BBWD).

BBWD supplies water to the largest portion of the target area. According to a site inspection report (TDD No. F3-8511-11) performed by NUS FIT 3, BBWD uses groundwater and surface water to serve approximately 30,400 persons. [REDACTED]

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As stated in the

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Geology Information

The Printed Circuits, Incorporated site is located in the Coastal Plains Physiographic Province, which is underlain by a wedge of unconsolidated and semi-consolidated sedimentary rocks that generally strike northeast-southwest and dip gently to the southeast from 10 to 60 feet per mile. Precambrian age crystalline bedrock forms the basement rock underlying the Coastal Plain sediments. The topography is that of nearly flat plains and broad, shallow valleys.

The site is underlain by Pleistocene age Trenton gravel, which is also known as the Cape May Formation. The Trenton gravel consists mainly of glacially derived, poorly sorted, gray sand, and gravel composed of materials ranging in size from fine-grained sand to boulders. The thickness of these sediments is less than 20 feet.

The Trenton gravel is underlain by Precambrian age crystalline rock consisting predominantly of the Wissahickon Formation, with lesser amounts of metamorphic and igneous intrusives. The Wissahickon Formation consists of medium- to coarse-grained gneiss and schist in which mica is the most conspicuous mineral. Hornblende-bearing mafic gneiss crops out about 0.15 mile northeast of the site and is a massive, dark green to greenish-black rock in which hornblende is the major constituent. The thickness of the crystalline rocks is not known.

The soils mapped at the site are the Pope loam terrace, zero to three percent slopes, and Chester silt loam, zero to eight percent slopes. Both soil types are deep and well drained. The Pope Series formed in loamy alluvial sediment, while the Chester soils formed in material weathered from gneiss and schist. The Pope loam grades from a brown loam to a fine sandy loam that is strongly to medium acid. Available water capacity is high, and permeability is moderately rapid. The Chester loam becomes channery with depth and increasingly more acidic with depth (neutral to strongly acid). Permeability is moderate.

Groundwater Information

Groundwater in the unconsolidated sediments is stored and transmitted through intergranular porosity. Modern wells penetrating 10 to 15 feet or more of saturated sand and gravel commonly yield 400 gallons per minute (gpm) or more and have specific capacities on the order of 20 gpm per foot of drawdown.

The crystalline basement rocks are a reliable source of small to moderate supplies of groundwater and are a main source of well water in the area. Groundwater movement is principally along fractures, joints, cleavage planes, and bedding-plane separations.

Groundwater in the unconsolidated sediments and the outcrop areas of the crystalline rock generally occurs under water-table conditions. The bedrock and unconsolidated sediments are considered to be a single hydraulic unit in the area. The direction of shallow groundwater flow at the site is expected to be southeasterly toward the Delaware River. Depth to groundwater is expected to be fairly shallow (less than 35 feet).

Sampling to Date

On March 18, 1985, EPA collected soil samples at the site. Extensive heavy-metals soil contamination was discovered on the property. Off-site migration of contaminants was also identified. Contaminated soil posed a direct contact threat, and 150 drums in poor condition posed a potential fire and/or explosion threat. An immediate removal action was ordered. Approximately 950 cubic yards of contaminated soil was excavated from the site and disposed in an EPA-approved landfill.

In early 1980, BCHD conducted a public and private groundwater sampling program. Extensive TCE and PCE contamination was prevalent. Throughout the area, several possible sources of contamination were identified.

Proposed Sampling Plan

The proposed sampling locations include the following:

- Up to three surface soil samples and three subsurface soil samples should be obtained beyond the areas where contaminated soil was removed (exact sample location will be determined in the field).
- A background soil sample should be collected.
- Home wells in the area have been contaminated in the past (early 1980s). It is reported that all homes are now connected to a public water distribution system. However, if any home wells are still operable (even though it may not be used), we may wish to sample these wells (exact number to be sampled is undetermined at this time).

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The total number of samples to be obtained is nine solids and five aqueous, including duplicates and blanks. Sample analysis will be performed for routine Contract Laboratory Program organic and inorganic parameters. All samples will be obtained in accordance with standard protocol as indicated on the site-specific work plan.

Michael McCarthy has been appointed team leader and will be responsible for the sampling plan.

Please endorse below and return with your approval or amendments to this plan. If you have any questions, please feel free to contact either Andrew Frebowitz, Michael Heffron, or Mr. McCarthy.

Respectfully,



Andrew Frebowitz
Assistant Manager



Michael Heffron
Section Supervisor



Kim Walters
Quality Assurance

AF/law

Attachments

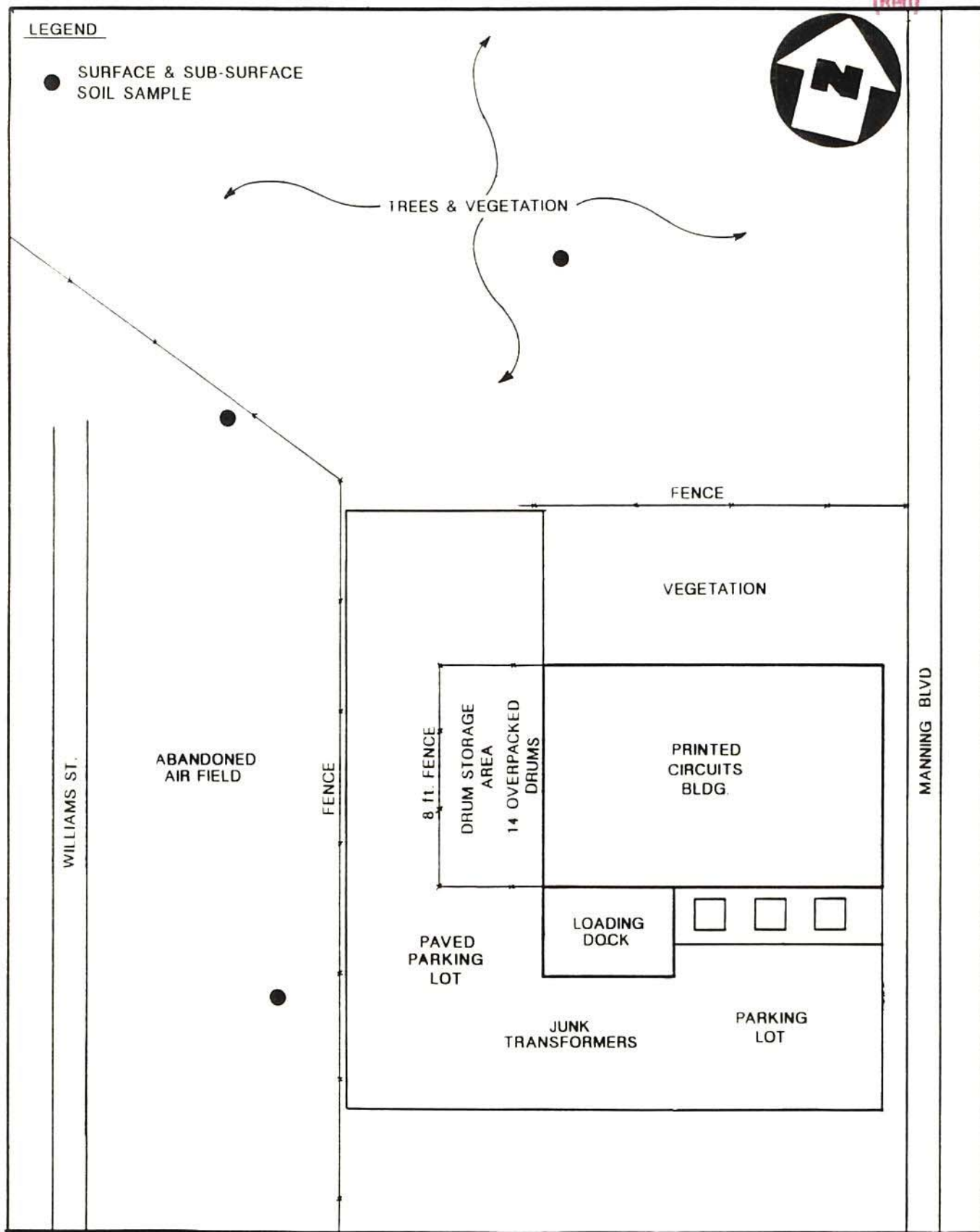
Approved by: _____

Date: _____

Amendments: _____

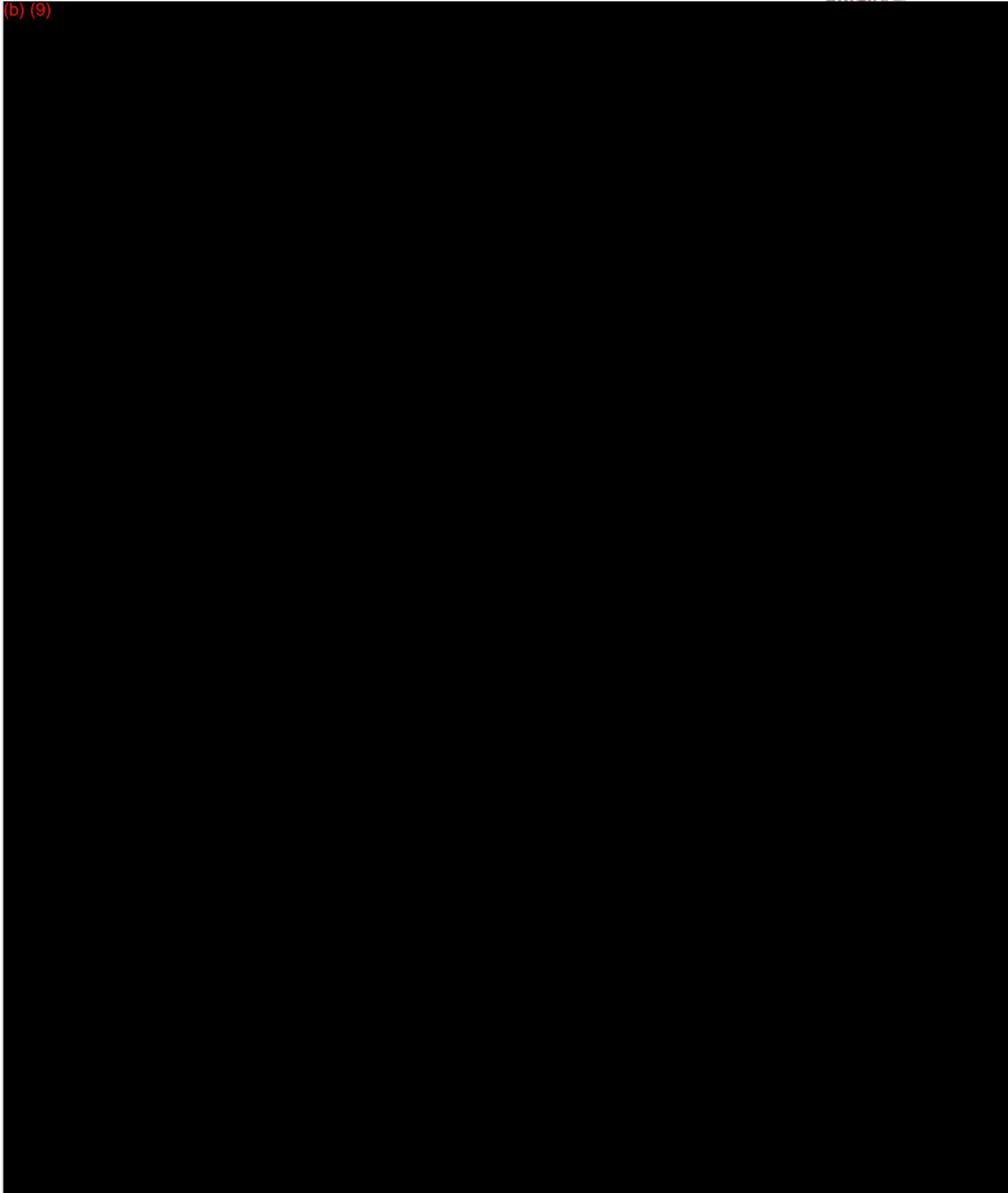
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PLATE 1



PROPOSED SAMPLE LOCATIONS
PRINTED CIRCUITS, BRISTOL TOWNSHIP
(NO SCALE)

FIGURE



HOME WELL LOCATION MAP
PRINTED CIRCUITS, BRISTOL TOWNSHIP
SCALE 1: 24000

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